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ABSTRACT

Developments in postsecondary education during 1970-75 are considered in relation to students, institutions, and faculty. The following issues pertaining to students are addressed: students who did not enroll, the enrollment rate, the economic origins of students, student incomes, the reliability of income distribution data, the occupational prospects of students, the likelihood of enrollment declines; and some policy implications of recent trends. Institutional trends include the following: the slowdown in the growth of enrollments, expenditures for instruction during 1970-74, reasons for tightening budgets, trends in the costs and financial crises of different schools, rationing access to selected institutions, the status of attrition in postsecondary education, and policy implications. The following issues pertaining to faculty are considered: faculty numbers, promotions and faculty movement, teacher salaries, the possible impact on finances of institutions, additional consequences of the oversupply of Ph.D.s, and policy implications. Among the trends are the following: students are increasingly enrolled in nondegree programs, and choose majors most likely to prepare them for jobs; the proportion of high school graduates enrolling in college declined by about 20 percent from the mid-sixties peak; the most drastic declines in enrollment occurred among middle-income students; the slowdown in the rate of economic growth has caused colleges to experience tight budgets; and the faculties experienced the effects of the financial situation in terms of constraints on their wages and increased workloads. (SW)

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RECENT DEVELOPMENTS IN POST-SECONDARY EDUCATION, 1970 - 1975

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ABSTRACT

The survey of developments in the post-secondary sector from fall 1970 to fall 1975 highlights the following significant trends:

Students: (1) students are increasingly enrolled in non-degree programs, and chose majors most likely to prepare them for jobs,

(2) the proportion of high school graduates enrolling in college declined by some 20 per cent from mid-sixties' peak. The most drastic declines occurred among middle-income students, while students from lower-income families continued to attend post-secondary institutions at an increasing rate,

(3) the imbalance between suitable jobs and college graduates has probably resulted in the relative declines in starting wages. More college graduates are filling clerical and manual jobs,

Institutions: (4) the slowdown in the rate of economic growth has caused institutions to experience tight budgets, both because they were unable to increase tuition as fast as they would have liked, and because outside sources of support fell short of their projected needs. The short-fall was most serious in the private sector,

(5) a large number of institutions lost enrollment during the past five-year period. Generally, the institutions which lost enrollment saw costs per student grow disproportionately and are potentially heading for trouble,

(6) despite these unfavorable developments, institutions which closed their doors account for an infinitesimally small percentage of available places. No large institution went out of business because of financial reasons,

Faculty: (7) the brunt of the financial penury in the sector was borne by faculties. Their salaries lagged other wages, and their work loads increased,

(8) the effects of projected Ph.D. glut were moderated by doubling the proportion of persons with doctorates in assistant professor jobs. The crisis has merely been postponed.

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STUDENTS

Enrollments in post-secondary education during the 1970's have been full of surprises to college and university administrators. During the first five years of the decade, enrollments lagged behind projections, and last fall, just after resignation had set in about the number of students likely to participate in post-secondary education, a nine per cent spurt in enrollment rekindled the spirits of optimists about the prospects of collegiate education in the U.S.

In the first six years of the 1970's, total enrollments increased 30 per cent, and nearly nine per cent between fall 1974 and fall 1975.[1] The rate of increase was slower than the 51 per cent growth recorded in the previous six years. Despite the recent spurt in college attendance, it is likely that the enrollments in the next six years will grow slowly if at all. Thus, it is important to sort out the developments in the recent past which are portents of the future, and identify those which are continuations of past trends which may not influence developments in the 1976-1982 period.

The most relevant analysis of enrollment trends below documents an important shift in the choices of courses of study by students. At the beginning of the decade, roughly one of six first-time students enrolling in higher education participated in non-degree programs. By 1975, probably as many as one in four chose this course of study. The post-secondary system was changing fast: it was becoming more

oriented to skill training and was devoting less of its resources to conventional academic training. Even students who enrolled in academic programs shifted their majors, and inferentially their career plans, quite drastically. For instance, in the fall of 1974, 27 per cent of all freshmen were planning to major in business, as contrasted to 19 per cent of the seniors, and the proportion of freshmen majoring in education was 15 per cent, as contrasted to 23 per cent of the seniors.[2] Students understood the message of the labor market, which signalled that much tougher competition for good jobs was in the offing. They acted accordingly, both by choosing to prepare for jobs which did not require traditional academic content, and also to train more intensively for the jobs which they were likely to fill.

This keener concern for the uses of education, and the tougher competition for meaningful jobs has resulted in other significant shifts in higher education, more emphasis on participation in graduate education, and increasing propensities to enroll in post-secondary institutions by older persons. The proportion of graduate and professional students in degree-credit enrollment increased from 16 per cent to 17 per cent from 1970 to 1974 (the last year for which detailed enrollment statistics are available),[3] and that of persons over age 35 increased from five to 12 per cent during the same time period.[4]

These important changes in the character of the post-secondary system are just beginning to be examined by policy analysts.

The students who did not turn up.

Two factors accounted for the disappointing levels of enrollments in higher education: (1) the lower than projected number of high school graduates, and (2) the decline of the propensity of high school graduates to enroll in college.

A little-noticed development in recent years has robbed the post-secondary sector of some 12 per cent of its potential clientele. The proportion of high school graduates to the total eligible population, which was slowly creeping up all through the 1960's until it reached 75 per cent of all 17-year-olds, got stuck there and even started to decline in the 1970's. By 1974/75 it dropped a full per cent below its 1960's' peak, and some five per cent below some earlier projections. Earlier projections (cf. Projections of Educational Statistics to 1979/80 published in 1970) had actually overestimated graduates that year by some 365 thousand persons. The overestimate was more than 12 per cent of the number of high school graduates that year.[5]

Another, more widely discussed reversal occurred in the trend for increasing proportions of high school seniors to go to college. The percentage of high school seniors enrolling in some post-secondary institution the fall after graduation peaked at 55 per cent in 1968, and by the fall of 1974 it had declined to 48 per cent.[6]

Between 1968 and 1972, this decline was caused by the lower propensity of males to attend post-secondary institutions immediately

after graduation from high school. The proportion of male high school graduates who attended college right after graduation declined from 63 per cent in 1968 to 47 per cent in 1973. Women's participation rates, historically somewhat lower than those of males, appeared to stabilize at close to 50 per cent of all high school graduates between 1968 and 1971. In the past three years, however, female enrollment rates appear to have moved to a lower plateau, some 43 per cent in 1973 and 46 per cent in 1974.

The decreasing magnet of college for males, immediately after high school graduation, has been variously explained as the result of (1) the termination of the Vietnam draft, and (2) the increasing disenchantment of high school graduates with the pay-off of a college education. The declining propensity of women to enroll in school could also be affected by the second factor.

There is little supporting information to validate either of these conclusions. It is much more likely that male high school graduates are postponing their enrollment in post-secondary institutions. This hypothesis is consistent with information collected by special Current Population Report surveys describing the propensity to enroll in higher education institutions among members of the high school classes of 1966 and 1974. In 1966, some 60 per cent of the members of the high school class definitely planned to attend or were considering attending college.[7] In 1974, some 68 per cent of all high school seniors had similar intentions.

Despite the higher proportion of seniors opting for college in the later time period, however, the enrollment rate in the fall following graduation in 1974 was two per cent below that of 1966. Is it possible that in the absence of the draft and with family finances tight a higher proportion of high school seniors are delaying enrollment in post-secondary institutions these days, as contrasted to 1966? If this is the case, a spurt in enrollment in fall 1975 could reasonably be explained by the excess of "old" high school students enrolling over those newly graduated who are postponing enrollment.

How many college students are there?

A reasonable answer to this question would require a great deal of data about college attendance in the United States. This data is not available and, in actual fact, there is surprisingly little certainty about the number of persons enrolled in higher education. This statement may baffle those who have followed the long series of statistics purporting to measure opening fall enrollments, a series published by the National Center of Educational Statistics, or the data made available by the U. S. Bureau of the Census, both in its decennial census publications and the annual October surveys of the Current Population Surveys. Nevertheless, we are not sure how many students are enrolled in the fall, since these sources publish different estimates of enrollments. The differences between the three series are not insignificant, especially when one tries to pin down an elusive trend.

There are a number of good reasons why the estimates of the three series differ. The National Center of Educational Statistics enrollment series is collected from post-secondary institutions which report the number of students presumably enrolled for the fall quarter or semester. It is quite possible that students who matriculate in a given institution never enroll, and it is equally plausible that some portion of part-time or extension students may be enrolled in more than one institution at a given time. These reasons have been adduced repeatedly to rationalize the higher figures which are reported by NCES, which in some years are five per cent higher than those reported by census reports.[8]

The enrollment estimates of the U. S. Census are derived either from the total decennial enumeration, or from annual sample surveys conducted in conjunction with the Current Population Survey. Whatever external evidence does exist appears to favor the sample survey over the complete self-enumeration. In 1970, for instance, the decennial census figures placed enrollments in post-secondary institutions at 7.3 million. The estimate of enrollments for persons under age 35, comparable to the data collected by the CPS during that year, was 6.9 million. The CPS estimate of enrollment was 7.4 million, and perhaps could be adjusted upward by some 385 thousand to account for the older age group excluded in the sample survey. NCES estimated enrollment during that year at close to 8.0 million. The NCES estimate exceeded

the adjusted CPS figure by 2.4 per cent. In 1974, when CPS extended the coverage to students of all ages, the difference between the NCES estimate of collegiate enrollment (degree-credit), which was 9.1 million, and that of CPS, 8.8 million, was a little over three per cent.

As close as these estimates appear, an analyst shudders at the thought that the errors may all be concentrated in the one small segment which he is trying to analyze. Under ordinary circumstances, both sets of figures must be used to describe the conditions in the post-secondary sector. For instance, enrollments by age are available only from the CPS. Reliable statistics on enrollments by control and type of school are to be sought from the NCES source, as are breakdowns of enrollment into undergraduate, graduate, professional, as well as part- and full-time students.

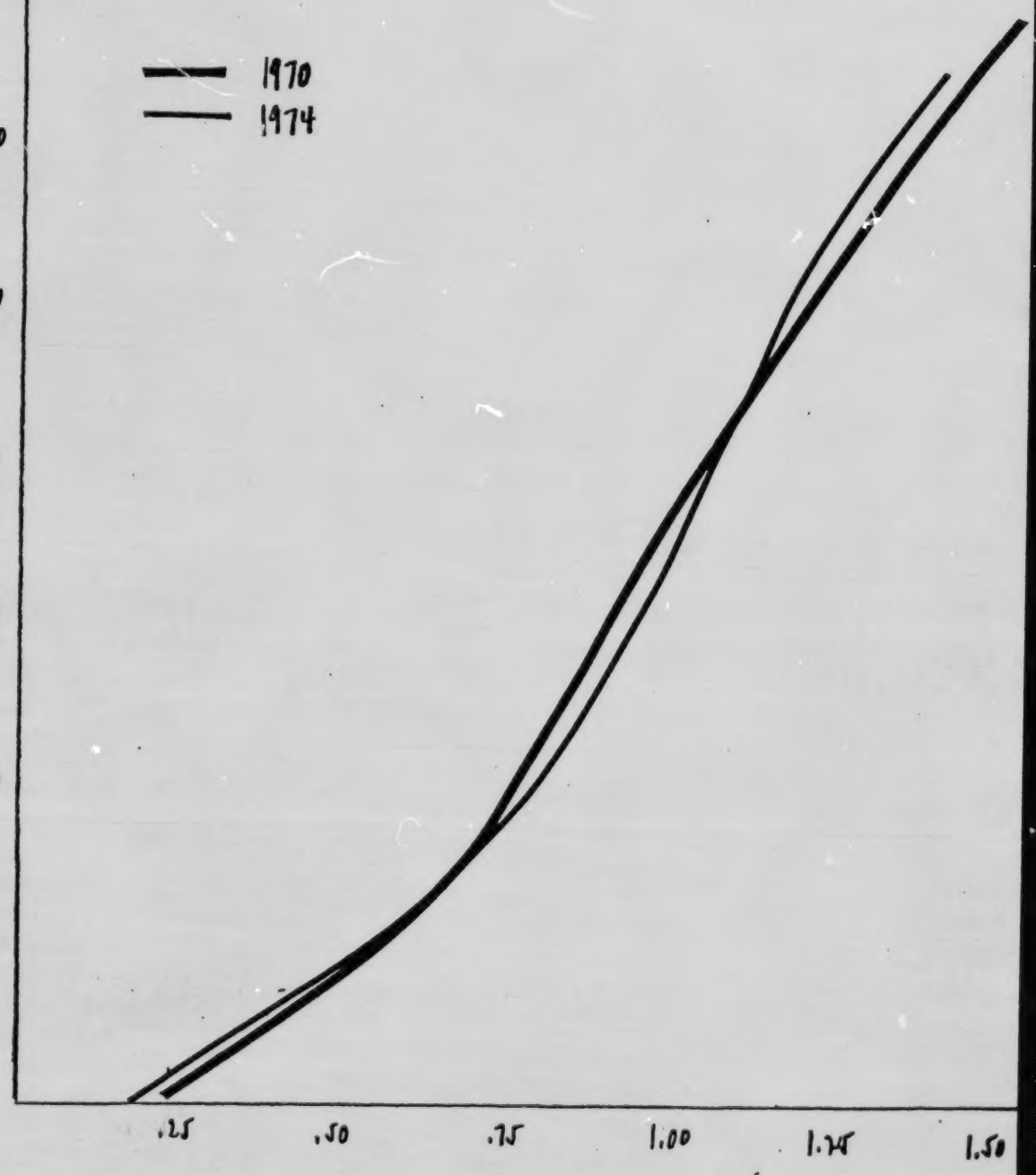
Even the small differences between the two series should instill healthy skepticism about any small changes in the magnitudes recorded by one series or the other from year to year. The scuttlebutt from the CPS staff, for instance, indicates that the increase in enrollments from fall 1974 to fall 1975 will not be validated fully by data collected in October 1975.

What are the economic origins of students?

The sense of frustration grows when more sophisticated analyses are attempted. Despite the fact that for many years now the federal government has been attempting to equalize opportunities to attend

CHART 1

CUMULATIVE DISTRIBUTION OF DEPENDENT STUDENTS BY RELATIVE FAMILY INCOME (MEDIAN=1.0), 1970, 1974



cut-offs in both 1970 and 1974 on the horizontal axis represented as a ratio to the median family income during that year. This transformation makes the two sets of data more comparable.

The conclusions from Chart 1 support the current rhetoric: The proportion of students from lower-income families, those with incomes roughly six-tenths of the national median, has not changed in the past five years. By contrast, a small decline has occurred in the attendance of students whose parents have incomes between .7 and 1.1 times the median. It would appear that the proportion of students of parents with middle incomes in the total student population has declined.

The conclusions need to be carefully hedged: (1) the statistics for the two years may not be comparable, because of different proportions of undergraduate and graduate students included among dependent students, (2) students from families in the middle of the income distribution may be attending vocational programs, which are not included in the series. The problem of tracing the economic origins of students becomes even more complicated when there is an interruption between high school graduation and college attendance. In the interim period, a student may have served in the armed forces--and with the aid of Veterans' benefit consider himself independent. Or perhaps, after working for a year or two and returning to school, he may no longer have to depend upon parental contributions for educational expenses and not be reported as a dependent.

Some more recent information about student incomes.

As a by-product of reports produced to estimate the budgets for Basic Economic Opportunity Grants, a number of special tabulations prepared by the U. S. Bureau of the Census, as part of their October 1974 survey, throw considerable new light on the income distribution of undergraduate students. Of all the full-time undergraduate students, 78 per cent were dependents, 10 per cent were married and were residing with their spouses, and 12 per cent were classified as independent. Roughly half of the independent students were veterans, receiving veteran benefits. Fewer than one in five dependent full-time students had parents whose income was less than $10,000. By contrast, a third of full-time dependent students' families had incomes over $20,000. These proportions also hold for part-time students.[10]

The income distribution of full-time undergraduate students is much more egalitarian than that of graduate students. Roughly one in seven dependent graduate students is in a family with less than $10,000 in income, and two-fifths are dependent upon families with incomes over $20 thousand a year. Other interesting data produced by the special tabulations is that the median incomes of all undergraduate students who are married are fairly close to the national average, and those of full-time undergraduates are in the range of families with heads under 24 years of age. It is also significant that the median income of independent students is close to the national median, slightly over $4,000. These

are encouraging findings to those concerned with the equality of access of education.

Reliability of income distribution data.

The findings about the economic origins of students depend on the accuracy of the answers to the income question. The accuracy of these responses is in doubt. For instance, it is recognized that the income question asked in October is less detailed, and hence less accurate than the one asked in March by the Current Population Census. Recently, the U. S. Census Bureau has warned users that incomes are under-reported, and has suggested the reported incomes represent only .85 of the true figure. If this adjustment were to be made to figures in Chart 1, the declining representation of students in higher education would be ascribed to families with incomes between .8 and 1.3 times the median.

Further doubt about the accuracy of the income figures can be raised in the light of a Census re-evaluation of accuracy in reporting incomes. A comparison of incomes reported in December 1970 and March 1971 indicated that on an overall basis, income distributions were fairly comparable. For individual groups, the results were less encouraging. Even allowing for under-reporting, only half of the families which reported their incomes at $3,000 or less in December were found in income categories which reported $4,000 or less in March. Is it possible that the families who understated their incomes in December

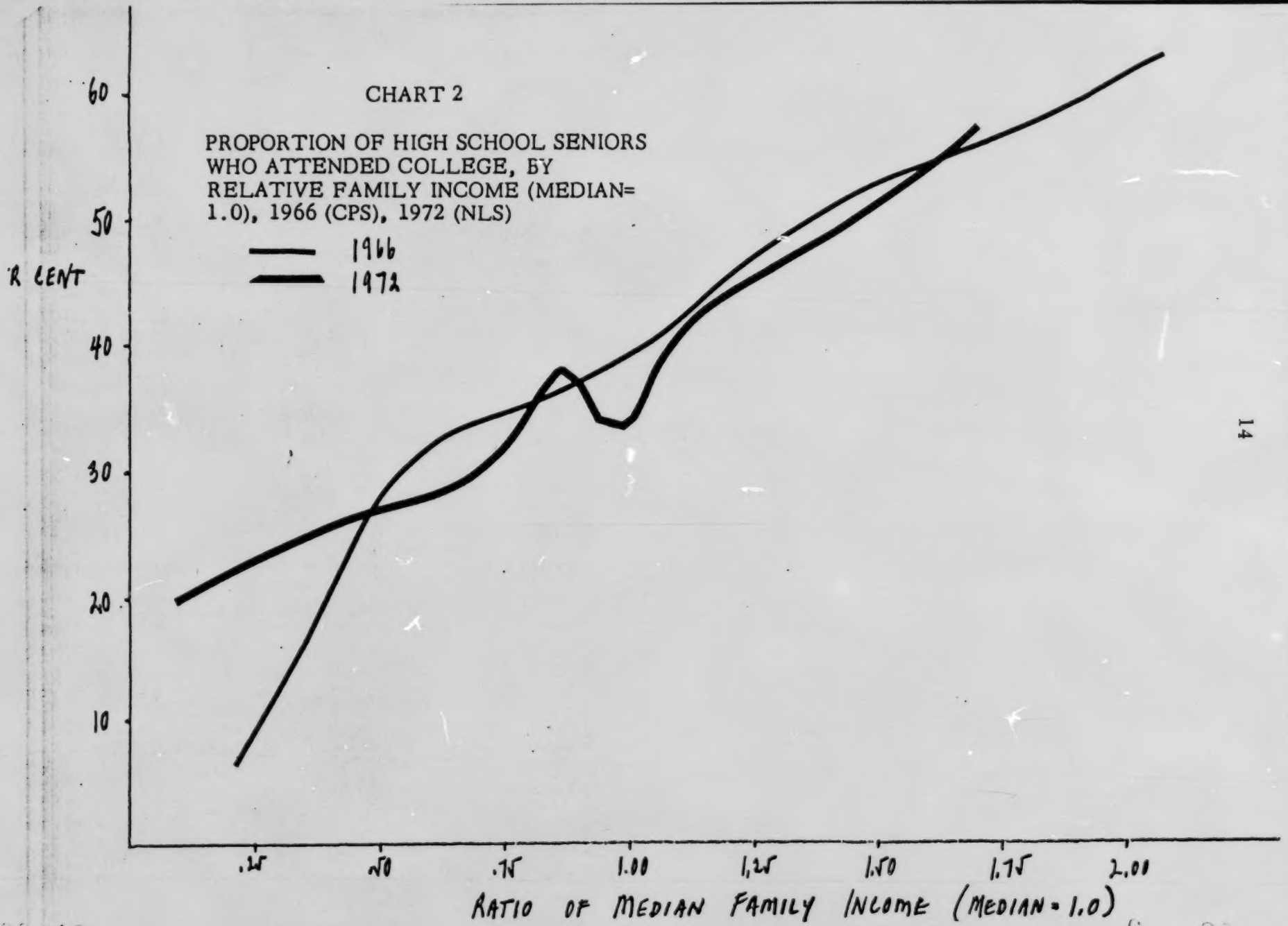
(or October) were the ones who were sending their children to college?

Questions about the accuracy of reported incomes plague most series purporting to describe attendance patterns of college students. For instance, graduating seniors in 1965, whose families were interviewed as part of the Current Population Survey, were followed up for a number of years and their experience in the post-secondary sector charted. The data, of course, suffers to the same extent of misreporting of incomes as all other data collected by the Current Population Survey, but it is still the best we have. It appears to be somewhat superior to information collected by the ambitious National Longitudinal Study of the High School Class of 1972. In the first instance, the non-response to the income question is 10 per cent in 1965 and 20 per cent in 1972, and there are some pilot studies which show that the data of the NLS have some systematic biases.

A comparison of enrollment rates of high school seniors in 1966 and 1973 appears in Chart 2. Once again the horizontal axis is the proportion of family incomes to the median in that year. Keeping in mind all the above caveats, it would appear that the enrollment rates of high school seniors from very poor families, with incomes below one-half the national median, have increased from 1966 to 1972, and those of children from all other families have declined somewhat. While there is some doubt about the accuracy of enrollment patterns reported in 1972 for children from families just below the median, the overall figures

CHART 2

PROPORTION OF HIGH SCHOOL SENIORS WHO ATTENDED COLLEGE, BY RELATIVE FAMILY INCOME (MEDIAN= 1.0), 1966 (CPS), 1972 (NLS)

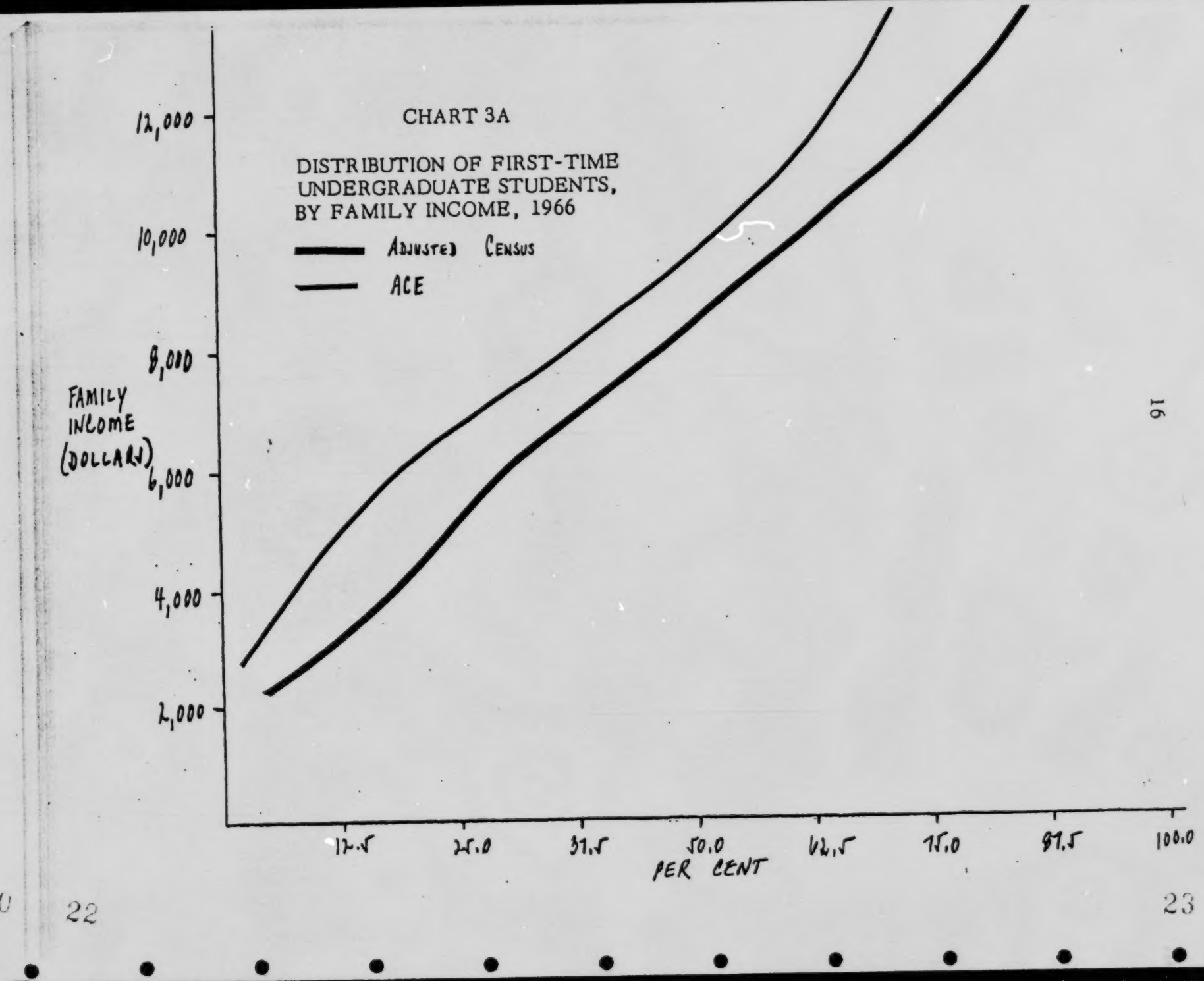


agree with those collected by the CPS during that year, and the conclusion about attendance rates, broadly stated, probably holds.

An attempt to develop a longer series of the economic origins of freshmen by using data collected to calculate freshmen norms by the American Council on Education does not seem to be promising. For the two years, 1966 and 1972, alternative distributions of enrollment of high school seniors are available and can be used to measure the reporting biases in the ACE series. It appears that these biases are serious and not systematic. Since over 90 per cent of the high school seniors who enroll in college the following fall do so full time, and since over 90 per cent of the freshmen who enroll full time have graduated the previous year, a comparison of the income distributions for 1966 and 1972 of ACE, the CPS and the National Longitudinal Study may not be out of place. In 1966, the ACE data tends to over-report the incomes of freshmen. It is fairly comparable to that of the U. S. Census Bureau in 1972, with a slight tendency to under-report low and high income recipients. Because the data do not overlap completely, small differences, like the ones observed in 1972, cannot be considered significant. On the other hand, because of large differences in 1966, it would not be prudent to use the series to measure historical trends until some external tests to validate data for the intervening years were developed. Chart 3 shows the distributions, with the Census income cutoffs adjusted for under-reporting.

CHART 3A

DISTRIBUTION OF FIRST-TIME UNDERGRADUATE STUDENTS, BY FAMILY INCOME, 1966



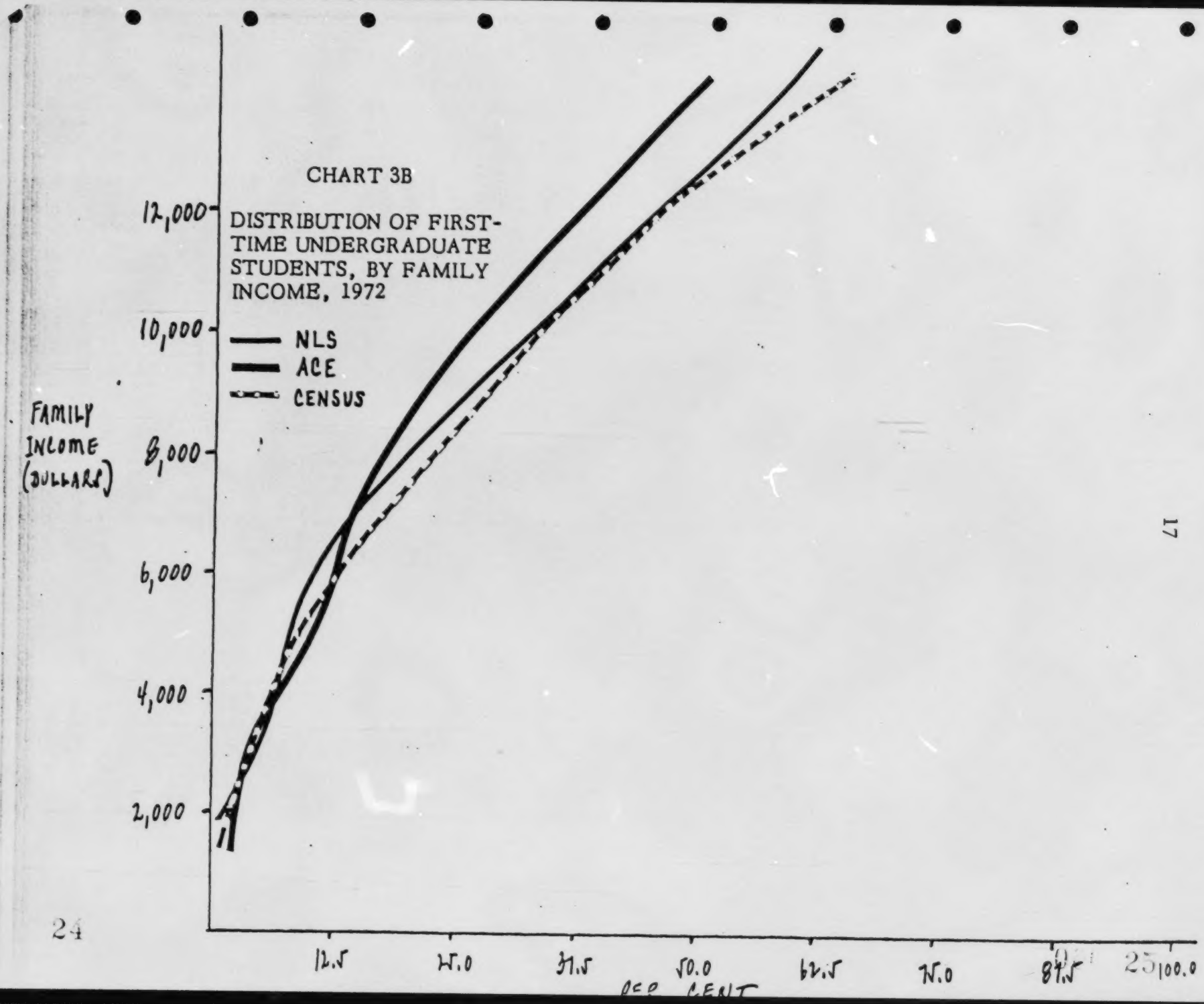


CHART 3B
DISTRIBUTION OF FIRST-TIME UNDERGRADUATE STUDENTS, BY FAMILY INCOME, 1972
NLS
ACE
CENSUS
FAMILY INCOME (DOLLARS)
12,000
10,000
8,000
6,000
4,000
2,000
12.5
37.5
50.0
62.5
87.5
100.0
PER CENT

The occupational prospects of students.

Besides the income origins of students, another topic which has been concerning policy planners in higher education is the job opportunities for new college graduates. Recent data has indicated that the salary differential between high school and college graduates has narrowed, especially for younger college graduates. Also more college graduates have been filling lower level jobs in clerical and sales occupations in the recent past. The wages of college graduates who worked full-year full-time was 53 per cent higher than that of high school graduates in 1968 and 1969. This ratio has since declined to 1.40. The decline in relative wages of younger college graduates is even steeper, from 1.39 in 1969 to 1.23 in 1973.[11]

These developments come as no surprise to those who have observed the deterioration of jobs filled by persons with college degrees. By 1972, one out of four college students graduating that year filled a clerical, blue collar or service job. In the 1960's, as data for 1958 graduates indicates fewer than one graduate in eight was in a position which was neither professional nor managerial.[12]

There is no doubt that the "post-Sputnik era" was the heyday for young college graduates, as starting wages increased faster than the wages for older persons with a college education. It is not surprising that in the present economic context their wages may be declining as well. Job prospects for all college graduates depend to a large extent

upon (1) the levels of public service employment, and (2) the level of transfer payments to the non-market (hospitals, education, etc.) sector. Between 1950 and 1970, roughly three out of five new jobs in management and the professions, the two occupations employing over 85 per cent of the college graduates, were created in either government, education, or other non-market activities.[13]

The job placement of new graduates reflects the current stagnation in these activities, especially in education, which offered roughly 10 per cent fewer openings to recent college graduates in 1972 as compared to 1960. Both other professional and white collar jobs held up surprisingly well between the two time periods (although there appears to be a deterioration in the quality of white collar jobs).[14]

The decline in the demand for teachers affected women much more than men, and although women managed to increase their penetration of professional jobs, one woman college graduate in five took a position in a clerical, service or blue-collar occupation, as contrasted to one woman in ten in the earlier time period. Among men, the proportion of men in these low-level occupations exceeded the proportion of women, since a lower proportion of males filled professional, teaching and upper white collar jobs in 1972 as compared to 1960.

In all probability, the deterioration in the job market for college graduates is not reflected fully by the narrowing of the gap between their earnings and that of high school graduates. As long as

college graduates continue creaming the job market, and a smaller proportion of persons with a high school education filled white collar and semi-professional jobs, the true decline in the marginal productivity of college graduates is understated by merely looking at the ratios of earnings of persons with more education, as contrasted to persons with less education. The decline in real earnings of young college graduates is a better indication of the deterioration of quality of jobs filled by younger persons with more education.

The future job prospects of college graduates, estimated in a rough and ready study by this writer, appeared to be truly dismal. We estimate that between a third and one-half of all college graduates in the 1975-85 period are likely to fill jobs which were formerly filled by persons with less education.[15]

Will enrollments decline in the face of adversity?

One of the more important issues facing federal policy is the extent to which its current subsidies to students, either through outright grants or through subsidized loans, are responsible for the oversupply of college graduates. An answer to this question is not available to date. Unquestionably, federal and state policies have swollen enrollments, as the propensity of low-income students to attend college increased, while that of middle income declined less than those of high-income students.

Perhaps this responsibility should be shrugged off lightly, as one of the undesirable by-products of an effective policy to encourage

social mobility. It is not at all clear that if the federal and other government ceased to subsidize education, the proportion of students who would enroll would decline drastically. It is much more likely that the trend for students to attend part-time and persist till they receive a bachelor's degree would snowball. In 1958, less than ten per cent of the seniors claimed to have attended school part-time any time during their post-secondary career. By 1974, the Current Population Survey reported that 16 per cent of the seniors were attending school part-time. It is also significant that in the survey of placement of college graduates in 1972, the same percentage of seniors reported that they were continuing in jobs held before graduation. These seniors are most likely to be full-time employees, and part-time students.[16]

It is also not at all clear to what extent students act as rational economic units, likely to abort their investment in education if the returns are lower, or, on the contrary act perversly, increasing their investment in order to snag desirable jobs, which are increasingly difficult to find. In the difficult job market, where positions which meet expectations of college graduates are few, an increasing proportion of bachelor recipients opt for further schooling. Of the recent graduates, roughly 9 out of 20 continue in school full time. Of those who do, some 28 per cent remain dependent on their families, families with relatively high incomes. Another 43 per cent are married, and either scholarships or the income of spouses place them above the median of families with heads under age

35. The remaining 29 per cent are independent heads of households, and 55 per cent of those have incomes of over $4,000 a year, placing them out of the reach of poverty.[17]

One can only conclude that as long as the children of the rich can afford to go to graduate school, and the wives or husbands of married graduate students earn enough to provide adequately for them, it is likely that the incentive to continue in graduate school will not moderate. Roughly 45 per cent of independent graduate students live on less than four thousand dollars a year. They number less than 15 per cent of the graduate population.

In all probability, there are considerable savings which accrue to all college students, both undergraduate and graduate, who attend school full time, which can offset part or all of the educational expense. The lower costs of room and board, and the spartan student "life-style," which frowns on extravagant outlays, probably reduce the subjective cost of foregone earnings.

Conventional calculation of the rates of return on post-secondary education ignores these savings. Most rates of return assume that students attend full time. However, as the proportion of part-time students increases and fewer students forego earnings to go to school, conventional calculations understate the rate of return. More students are likely to attend part-time, as the rates of return for college education decline. This may negate the forces which discourage enrollments.

Some policy implications of recent trends.

The increasing competition for jobs by college graduates raises a number of issues for the policy maker:

(1) To what extent is it realistic to encourage enrollment of marginal students in academic post-secondary courses? Is it fair to induce children of poor parents to forego income for a number of years during their post-secondary education if they are not likely to improve their earnings substantially as a result of the post-secondary exposure?

(2) If an increasing proportion of college graduates will continue into graduate school, both to get to the head of the job queue and to improve their chances of promotion, will the repayment of loans by children with low-income parents prevent them from spending money even on a part-time graduate education? Is it reasonable to postpone some fraction of the repayment obligation to part-time graduate students?

(3) If the returns from human capital are declining, is it necessary to reconsider the present structure of student aid, and devise incentives to encourage part-time study?

There are no set answers to the three questions raised above. If developments in the past few years are a portent of future trends, perhaps one ought to worry least about the decisions of students from poor families, if their enrollment trends are no different than the rest of the students. Students in the post-secondary sector appear to be aware of the deterioration of earning prospects of persons with college degrees, and are increasingly shifting to skill training. Federal authorities ought to monitor closely the availability of openings in these programs. The danger that students will be oriented to majors where spaces are available rather than the ones they desire could become real in the future.

As long as borrowing by students cover only a small part of their outlays, the second concern is more one of equity rather than policy. Even after the recent decline in earnings of recent college graduates, most persons with some college or a college degree find jobs which pay well above the poverty level, and a means tested program for graduate students would have little scope.

By contrast, the levels of subsidies to college students must now be evaluated by new standards. Instead of justifying them as contributions to economic productivity, analysts ought to weigh them in the light of contribution to social mobility, and hence become more concerned with post graduation careers of students from various socio-economic backgrounds.

INSTITUTIONS

Most important developments.

The discussion of changes which affected institutions in the course of the past five years focuses on these facets of post-secondary school development: (1) The changing distribution of students by type of institution, (2) the drastic break with past trends in instructional costs per student, which resulted in declines in constant terms of outlays per student, (3) an examination of some of the more obvious causes for this reversal in trends, i.e., the slowdown in economic activity, the new fiscal stringency imposed upon state governments by the electorate, and the opportunity to cut costs and corners because of the weaker bargaining ability of faculties, and (4) the impact on institutions of excess spaces, which resulted in an ebb and flow of students with numerous institutions losing enrollment despite growing numbers of students, and (5) an analysis of the type of institutions which either closed or merged, and a comparison of their characteristics with institutions which lost enrollment during the recent time period. This last analysis may give an inkling of those segments of the post-secondary sector which are in danger of extinction.

The slowdown in the growth of enrollments.

During the most recent five-year period for which detailed enrollment statistics are available, 1970/71 to 1974/75, total enrollments in post-secondary institutions increased by 19 per cent, which

was roughly one-half of the 35 per cent rate of increase that had been experienced in 1964/65 to 1969/70. For the first six years, as we already noted, enrollments grew 30 per cent. This slowdown in the rate of increase from the 1960's to the 1970's caught higher education planners by surprise. They were further exasperated to find that whatever growth in enrollments existed was very unevenly distributed.

Thus, public two-year colleges gained more enrollments than the rest of the collegiate sector. The number of non-degree students who mostly attend this type of institution mushroomed by 83 per cent during this latest five-year period. By contrast, degree-credit undergraduate, first professional and graduate enrollments grew by only 14 per cent in both the public and private sectors from 1970/71 to 1974/75.[18]

In the aggregate, public-sector enrollments increased by 24 per cent in the 1970-1974 period, roughly half the rate of the previous five years. But the two-year institutions gained at the expense of public four-year colleges, both in the degree-credit and non-degree-credit programs. Public two-year colleges increased their share of public degree-credit students from 26 to 31 per cent, while the portion of non-degree students enrolled in these schools grew from 92 to 94 per cent between 1970 and 1974.

The private sector continued to lose its share of the post-secondary market as it increased its enrollments in four-year institutions by some five per cent. Private two-year schools, which account for a

tiny share of total private enrollment, maintained their share by increasing the non-degree enrollment while continuing to lose degree-credit students.

The slowest growth during the five years 1970 to 1974 occurred in the degree-credit programs, where overall enrollments increased by more than 10 per cent. Private institutions' degree-credit enrollments remained essentially fixed, and all the growth devolved to the public sector. (In the non-degree-credit area, the private sector's share remained infinitesimal, less than five per cent, despite the fact that private non-degree enrollments doubled.)

Undergraduate programs grew more slowly than other degree-credit programs, at a rate of nine per cent. Graduate program enrollments increased somewhat more rapidly, by some 15 per cent during the past five years, and a faster growth, of some 36 per cent, occurred in professional programs. However, even this fast rate of growth was overshadowed by increases in the enrollment of "unclassified" students, whose propensity to enroll increased almost as much as that of non-degree-credit students.

The fastest growth, as was already mentioned, occurred in the non-degree, mostly vocationally-oriented programs, where a leap of over 80 per cent was recorded. Most of the students enrolled there are in public two-year colleges.

Expenditures for instruction 1970 to 1974.

In a long-range survey of costs of instruction in the post-secondary sector covering some 37 years, June O'Neill observed that (1) there was amazing stability in post-secondary instructional resources per student from 1930 to 1967, and (2) costs of instruction increased faster than the price level.[19] The first finding was relatively startling, since in the 1960's the democratization of education was occurring at a rapid pace, and presumably low selectivity/low cost institutions were increasing their enrollments faster than high selectivity and presumably high cost institutions. Our analysis of the data for the 1960's confirmed Dr. O'Neill's findings, as we documented that community colleges did not necessarily have lower costs than other public institutions. Furthermore, the outlay per student in the public sector four-year institutions was rising faster than the average, and the savings which could have accrued from the shift of students from the private to the public sector did not materialize.

Our estimates of outlays per standard undergraduate student (an index derived by weighing undergraduate students as one, professional students as two, and graduate students as 2.5, roughly proportionately to the cost of instruction)[20] show that real costs in constant prices broke this trend from 1967 and 1970. Since that time till 1974, costs of instruction stabilized and did not grow significantly in the three years for which data is available. In 1974/75, our guess is that the costs per

student did not rise faster than the CPI either, despite marked increases in operation costs, caused by increases in fuel and utility prices. Most significantly, the costs of instruction did not rise any faster than the cost of living index in the course of the most recent past. Secularly, the index of instructional costs rose nearly one per cent faster than the CPI.

Between 1966/67 and 1973/74, costs deflated by an appropriate institutional index increased roughly 19 per cent per standard student in both public and private institutions. The instructional cost per standard undergraduate student in public institutions was ninety-one per cent of the private sector figure in both 1969/70 and 1973/74.

High levels of unemployment, which both reduced state revenues and increased the claim on states for unemployment and welfare payments, undoubtedly strengthened the pressure to keep in check or reduce post-secondary budgets. Nevertheless, it appears that state appropriations for higher education increased some 25 per cent from 1973/74 to 1975/76 and still provide roughly the same real resources per student as at the beginning of the decade. The severity of financial problems of the private sector is less easy to estimate. Indications abound that serious cost-cutting continues in private schools, and budgets are balanced at the expense of both faculty salaries and faculty numbers.[21]

Reasons for the belt-tightening.

The principal revenue sources devoted to instruction are

(1) tuition and fees, (2) state and local government appropriations, important in the public sector, and (3) endowment income, of greater importance to the private than the public sector.

In the 1960's, the ratio of public and private tuition per full-time equivalent student was a relatively constant percentage of disposable income. It remained this way in the early 1970's, some 12 per cent of per capita disposable income for public schools' tuition, and 50 per cent for private ones. Since disposable income started declining in real terms in the course of the past three years, the ability of tuition to contribute to increasing costs of instruction must have been impaired considerably in the very recent time period. Other sources of funds did not rescue this shortfall, as the share of tuition in total instructional expense increased slightly from 20 to 22 per cent between 1969/70 and 1973/74 in public schools and from 60 to nearly 62 per cent in private schools.

Until lately, state and local governments contributed as much as could be expected from past trends to public schools. A regression equation fitted to the experience of the 1960's, which took into account the share of disposable income and the number of students enrolled in the public sector, produced an estimate of (in 1967/68 dollars) $7.1 billion of state and local subsidies to local education in 1973/74. In fact the subsidy was $7.5 billion.[22]

Public institutions, between 1969/70 and 1973/74, did not suffer from a relative shrinkage in general endowment and gift income

either. While endowment income rose 35 per cent, slower than the 41 per cent for instructional costs, gifts more than doubled, for a total rise in these sources of income of 73 per cent.[23]

Private institutions did not fare nearly as well. Endowment income rose only 28 per cent and gifts 36 per cent. If past trends were continued, private institutions could have expected to receive $.5 billion more than the actual $1.3 billion in endowment and gift income.[24]

Both endowment income and private gifts accounted for 24 per cent of the total instructional outlays of private schools in 1969/70, and 23 per cent in 1973/74. In neither year was the budget of these institutions in balance. The adversity of the private sector was becoming a way of life.

Trends in the costs and financial crises of different schools.

Describing the aggregate trends in the costs and revenues of the public and private sectors does not begin to paint an accurate picture of the problems faced by certain types of institutions in either sector. As was mentioned at the beginning of this study, the small increases in enrollments which occurred between 1970/71 and 1973/74 did not benefit all schools equally, and while some schools gained students in the recent past, others lost a considerable number.

More than a third of the post-secondary institutions in the continental United States enrolled fewer students in 1973/74 than in 1970/71. One school in nine lost more than 10 per cent of its students

during these three years. As a general rule, schools which lost enrollment were unable to control their costs, and their expenditures on instruction per standard undergraduate student increased faster than for the rest of the post-secondary universe. As a result, they were much more likely to face critical financial problems.[25]

The schools whose finances were destabilized by financial declines were more likely to be in the private sector. One out of two private schools lost enrollment during this period, and one in seven experienced serious enrollment declines which exceeded ten per cent. The private schools which did not lose enrollment were most successful in controlling costs, with instructional costs per standard undergraduate student remaining stable in constant dollars. The schools which lost less than 10 per cent of their student body saw their costs rise five per cent in real terms, and those whose enrollments declined by more than ten per cent spent 16 per cent more per student in 1973/74 than in 1970/71.

In general, schools in the private sector had a great deal of trouble paring their resources in proportion to the decline in enrollments. Nevertheless, economy moves in the face of adversity were much more effective than those of public institutions.

Although a smaller proportion of public institutions were hit by declines in enrollment, the management of their budget was even less tight than in the private sector. Schools with small declines in enrollment witnessed cost increases of 11 per cent, and schools where the

student body was decimated, or worse, saw their costs grow by 18 per cent. Even in the face of large declines in enrollment, most public schools did not have their dollar budgets cut. The erosion of the purchasing power of the dollar caused them to reduce their resources.

A comparison of the expenditures for instructional purposes of schools which lost enrollment and those which did not reveals a curious pattern: with schools classified by their geographical recruitment area and by the ability level of their freshmen, it appears that students were attracted to those schools with high levels of expenditures in 1970/71. Schools of a given type, with a given clientele, were more likely to lose students if their instructional expenditures were lower than average. However, by 1973/74, the institutions which lost students were spending as much, or more, than the schools which had not lost any students. In a follow-up to this analysis, we shall compare the enrollments in fall 1974 to those of fall 1973, and examine whether the changes in outlays influenced the flow of students.

In an attempt to explain changes in enrollment from 1970/71 to 1973/74, several preliminary regression analyses were made with institutions grouped by control, average freshman SAT scores, recruitment area (national, regional, state and commuter) and enrollment change. Averages of instructional costs, tuition, etc., were computed for each group. Five ranges of average SAT scores, four categories of geographical recruitment and three ranges of enrollment change could

have produced a potential of 120 possible groups. Not all cells had observations, and those with fewer than nine institutions were not used in the regression. A total of fifty cells remained--twenty groupings of public institutions and thirty private. Separate regression analyses were made for the public and the private institutions. The explanatory variables included the average instructional expenditure per full-time equivalent standard undergraduate student, average tuition and average instructional subsidy (instructional expenditure per FTE-SUS less tuition) for 1970/71 and 1973/74. The dependent variable was the ratio of total FTE enrollment, 1973/74 to 1970/71.

Three groupings of the independent variables were used: (1) average instructional expenditure per FTE-SUS, average tuition and average instructional subsidy for 1973/74, (2) the same variables for 1970/71 and (3) average instructional expenditure per FTE-SUS for 1970/71, average instructional expenditure per FTE-SUS for 1973/74 and average instructional subsidy for 1970/71. The latter group of variables (3) explained a larger proportion of the variance, both in the group of average data for public institutions and in the private group as well. In neither case was the 1970/71 subsidy particularly significant.

In these preliminary analyses, the regression equation accounted for 47 per cent of the variance in the public sector and 71 per cent in the private.

The results of our preliminary analysis were encouraging,

in that a significant proportion of the variance was explained for the private institutions, using group average data. An expanded analysis of the individual institutional data should provide a better understanding of the factors influencing changes in enrollments.

The results of the regression analyses are surprising. A less sophisticated impressionistic analysis of enrollment changes of public or private schools or schools with the same geographical recruitment area, or with the same level of freshmen ability, makes it appear students in the public sector were acting more rationally. Students were moving from low to high expenditure schools. In the private sector, some schools with higher expenditures were losing students, while those with lower outlays were maintaining them.

Further analysis should delve into a number of additional factors. For instance, we noticed that the resources used to educate students in the most selective schools declined in relation to the resources per student in schools with average selectivity. In the case of the public sector, 80 per cent more resources were expended in selective schools than in the average schools in 1970/71, but only 66 per cent more in 1973/74. In private schools, the differences in resources between the most selective and the average schools also narrowed, from 61 per cent in 1970/71 to 47 per cent in 1973/74. The relationship between resources in schools with other levels of selectivity remained virtually stable in both time periods. Is it possible that the resource shortage for the elite

school is as real as their administrations claim it to be? Or is it possible that they are cutting down on resources expended for teaching graduate students?[26]

The co-existence of the private sector and the highly subsidized public sector cannot be explained simply. At present, almost identical levels of resources are expended on students of average and above-average ability in both sectors. What causes the concentration of high-ability students in private schools? Federal concern for diversity will be better served if the features which make the private post-secondary sector desirable are better understood.

Rationing access to selected institutions.

The Wall Street Journal on November 11, 1975, reported that some states were rationing access to selected institutions, and cited tight budgets and space limitations as the reasons for this move. In most instances, the institutions which had experienced the fastest growth were the ones to which the access was being rationed.

In the light of our analysis, it is likely that overall limitations of state higher education budgets are cited merely as excuses to redirect enrollments to institutions which have been losing students. The alternative of closing less desirable institutions is probably politically impractical. Perhaps the secondary effects of such a policy may be quite beneficial to students.

We decided to test the hypothesis that the availability of a

large number of institutions is likely to facilitate part-time attendance by students. A small-scale study to test this proposition turned up very encouraging results.

A simple model was used to explain the proportion of part-time students, state by state, for the fifty states and the District of Columbia. The proportion of part-time students was explained with the help of the following variables: (1) number of campuses per thousand square miles, (2) the number of campuses per thousand population, (3) per cent of the state population living in metropolitan areas, and (4) state per-capita income. The rationale for the first two variables is obvious, as they are convenient measures of the availability of campuses in a political subdivision. The third variable, the proportion of the population living in metropolitan areas, served essentially the same purpose, since each metro area contains a post-secondary institution and hence persons living in metropolitan centers have easy access to a college. State per-capita incomes were introduced to improve the comparability of data from various states, since more affluent persons are more likely to attend college both part and full-time.

Separate regression equations explained the proportion of part-time students in total enrollment by state for (1) degree-credit undergraduates, (2) first-time students, (3) resident graduates and (4) resident professionals.

Two equations provided surprisingly good explanatory results:

(1) 69 per cent of the variance in participation rates of degree-credit undergraduates was explained by the four variables, as was (2) 47 per cent of first-time enrollments. For enrollment beyond the baccalaureate, the model did not work as well. It explained only (3) 9 per cent of the graduate students' full-time/part-time split and (4) 44 per cent of the professional students' attendance patterns.

In the case of undergraduate total and first-time enrollments, per-capita income for all undergraduates explained less than one-third of the variance, and two-thirds were accounted for by institutional proximity variables. The most important of these was the number of campuses per thousand miles in the state.

The results of the regressions are extremely sensitive to the specification of the model. If one were to rerun the model with the dependent variable as a ratio of full-time equivalent students to total students--a formulation useful to higher education planners in computing the work load for their system--the squares of correlation coefficients are even higher, as follows:

Degree-credit undergraduates	.81
First-time students	.76
Graduate students	.40
First professional students	.51

In all cases except graduate students, the most important single variable was the number of campuses per thousand square miles. In the case of graduate students, per-capita income was more significant.

This simple exercise highlights the importance of taking into account the availability of institutions. We intend to follow up these promising results with more sophisticated models in order to understand the various factors which determine both the level and the pattern of enrollments.

Institutional attrition--not a problem, as yet.

In the light of our findings that the availability of nearby institutions facilitated enrollment by part-time students, a visceral reaction to the closing of 114 institutions of higher education in the course of the past five years is, obviously, alarm. A closer look at the characteristics of these institutions reduces the concern considerably. Most of the institutions which closed were (1) either two-year colleges, which were pushed out of business by some nearby public institution, or (2) Catholic schools, with declining enrollments, which depended on a supply of seminarians to round off their rolls. In this later case, the crisis in the Catholic Church, more than the overall crisis of finances, was responsible for their closing.[27]

It is significant that all the schools which closed in the past five years enrolled fewer than 30 thousand students, less than one-third of one per cent of the post-secondary enrollment in any one of the recent years. An analysis of schools which closed in 1974/75 revealed that every county housing a school which closed contained at least one alternative post-secondary institution, and in nine cases out of ten, at least four

alternative institutions were available to commuter students. Part-time attendance opportunities were not likely to be reduced by the schools which closed in the course of the past five years.

Future institutional fortunes.

The past difficulties of certain institutions in attracting students merely give a foretaste of the conditions of the post-secondary sector in the future. If overall enrollments do decline, it is quite likely that some schools will lose a higher proportion of students than others. Given the past inability of schools to scale down budgets when enrollments decline, it is possible that the financial conditions of a number of private schools, especially those which lose enrollment, will worsen. A prognosis of the impact of financial penury on the future of such schools must be drawn. Will they close? Will they drastically reduce the resources spent on their students? Will they be able to attract students if they do?

In the public sector difficult choices will be faced if overall declines in post-secondary budgets are enforced by state legislatures, as a consequence of declining enrollments. Is it likely that the prestige schools in each state will see their budgets per student decline faster than those with less prestige? This can happen if across the board cuts are enforced by the states, and enrollments decline at a slower rate in prestige schools. Will steps be taken to place ceilings on enrollments in certain schools to protect the student body of other schools? Will the private sector be included in the planning of enrollments state by state?

More recent evidence.

Two recent studies attempt to update developments in financial conditions of the colleges and universities. The more comprehensive one, by Lanier and Andersen, attempts to deal with both the public and private sectors, while the one by Bowen and Minter limits itself to private schools only.

Lanier and Andersen[28] push their analysis one year beyond the latest HEGIS survey to the academic year 1974/75. The conclusions of their study indicate that the trends identified above for the years 1969/70 to 1973/74 continued:

(1) Costs per student grew slower than the CPS in 1974/75;

(2) real costs per student remained constant or declined irrespective of the index used; and

(3) the share of most categories of expenditure did not change drastically during the course of the past few years.

Surprisingly, operation and maintenance, despite the rise in fuel prices, did not increase by more than one-half of one per cent for most categories of schools, and actually declined for some types of schools.

The most striking fact brought to light by the study is the estimate for 1974/75 of 34 per cent of the sample of private institutions and 16 per cent of the public institutions had deficits in current fund revenues. For private institutions, the proportion of institutions with deficits did not change significantly from the previous year, but increased

from 29 per cent in 1972/73. The trend in proportion of public institutions with deficits was not as straightforward: it dipped from 21 per cent in 1972/73 to 14 per cent in 1973/74, before rising to 16 per cent in 1974/75.

More significant is the trend by type of school. Generally, universities in the private sector are coping more successfully one year, and less successfully the next with deficits, while public universities have reduced these deficits more consistently. In both the public and private sectors, rising deficits are in schools with less prestige. In all probability, losses in enrollment prevented these institutions from controlling costs.

The rather pessimistic findings of the first study are not borne out by the second recently published survey of the prospects of private colleges.[29] Probably the difference in opinion is due to two causes, first because of the composition of the sample, and also because opinions rather than facts were solicited. The sample of this second study consists of 100 private institutions, which had a better batting average in maintaining enrollment levels than the average private school. For instance, 50 per cent of private institutions lost enrollment from 1970 to 1973. Only 32 per cent of the sample lost enrollment during the same time period. This is not surprising, because both the number of institutions and the enrollment in the sample under-represents institutions which are not selective. Many of these institutions sampled in the study successfully reversed the declines in enrollments from 1973/74 to 1974/75

and could afford to feel optimistic. The study, based mostly on subjective evaluations of administrators, does conclude that the private sector is coping successfully with its financial problems.

Our analysis of the finances of institutions based on information from a prior year, but covering the while universe of post-secondary institutions, arrived at essentially the same conclusions.

Some implications for policy.

Policy analysts hard-pressed to find funds for institutional support could correctly conclude that no immediate action is necessary. With no evidence of an acute crisis, it can be argued that others, not the federal government, can take care of the institutions, and that the private sector is working out a modus vivendi which permits it to survive.

In the short run, these conclusions are not drastically wrong. In the long run, they could very well prove to be fatal to some sectors of the post-secondary establishment. If, at some time in the not too distant future, total enrollments start declining, it is quite possible that the ability of some private schools to attract students will be impaired. Probably the schools affected most drastically will have little claim to academic distinction, be small, probably sectarian, and recruit students from a single state or metropolitan area. The conclusion that the American intellectual climate will be adversely affected by the disappearance of these schools is hard to defend. It is not easy to rationalize how these schools contribute to the diversity of American thought, although they

might contribute to the diversity of post-secondary choices. Much more immediate concerns should be centered on the retrenchment moves of the better schools, which could very easily affect both the productivity of their faculty and dry up the training ground for young promising scholars.

FACULTY

Total faculty.

The total faculty of post-secondary institutions which numbered roughly half a million members in 1974/75 grew in numbers during the past five years at roughly one-third the rate of the previous five. Our preliminary estimates place the growth at 7 per cent during the most recent five-year period, as contrasted to 24 per cent for the five-year period ending 1969/70. (These estimates are based on AAUP publications, and differ slightly from NCES estimates.)[30] The slowing down of the faculty hiring rates was due to the leveling of enrollments, the virtual stability of employment in research and development endeavors at colleges and universities, and financial pressures on academic budgets. This last factor, it is believed, has resulted in "zero full-time faculty growth" for the past two to three years.

This stability in faculty numbers was maintained despite an increase in faculty work loads of some 12 per cent (when faculty work loads are measured by the difficulty of instructing students at different levels). Even if the work loads were measured more crudely in full-time equivalent students, without any allowance for the additional difficulty of instructing graduate and professional students, constant numbers of instructors taught seven per cent more students.

The slowdown of the faculty growth had important implications for faculty mobility, job openings for new Ph.D.'s, wages of existing

faculty, and the costs of the average faculty member to institutions. Each one of these topics is discussed below.

Promotions and faculty movement.

The faculties of our colleges and universities are becoming more top-heavy. In 1970, 49 per cent of the total faculty was tenured. By 1975, 55 per cent was tenured. The share of assistant professors had not changed significantly, and the brunt of the greying of the faculty has resulted in the reduction of port-of-entry jobs for instructors.[31]

If past trends of retirements, deaths and quit rates prevailed together with the small growth in total faculty, new tenured openings numbered no more than 65 thousand for the period 1970 through 1975. It is likely that some 55 thousand of these were filled with Ph.D.'s, and the rest with persons with professional degrees or persons with substantial achievements in humanities, the arts, etc., who became professors without the crutch of the doctorate.

Even if the majority of these appointments were filled with former assistant professors, not more than two assistant professors in five were reappointed to a tenure job. The present ranks of assistant professors must have been filled with recent Ph.D.'s, and assistant professors who moved at the same rank from one institution to another. We have estimated that roughly one-third or 56 thousand of assistant professors in 1970 had already earned their Ph.D.'s. Together with 164 thousand new Ph.D. recipients, they were competing for the 172 thousand

assistant professor jobs, some of them in two-year colleges, and filled with persons without Ph.D.'s. If the proportion of assistant professors with Ph.D.'s doubled from one-third to two-thirds during the past five years, it is likely that some 115 thousand out of 210 thousand Ph.D.'s on the market during the past five years found jobs in academe. This is in line with past long term trends, and 20 thousand short of the expected employment of Ph.D.'s based on late 1960 patterns. This shortfall of 20 thousand is probably not distributed evenly by discipline. With the changing mix of students, with fewer majoring in liberal arts and education, Ph.D.'s in these disciplines bore the brunt of the shortage in openings. While doctorates in education could find positions in administrative positions in elementary and secondary school systems, humanists and historians bore most of the hardship due to the declining trend in academic hiring.

The developments in wages.

The relative ease of the market for faculty reflected itself in a slower growth of compensation. In each of the past five years, faculty salaries rose slower than other wages and since 1973 lost purchasing power. True, the loss of purchasing power was also felt by the rest of the workers, as compensation for wage and salary workers also lagged behind the price level.[32]

The slight decline in faculty compensation compared to salaries and wages does not measure accurately the decline in the

economic status of the university teachers. Not only was the failure of instructional compensation to keep up with wages and salaries a reversal of past trends (in the 1960's the compensation of professors increased some 20 per cent faster than this index), but also the demographics of the teaching force made this decline even harder on the average professor. With a larger proportion of faculty in senior jobs, the loss in purchasing power is greater than the one shown in the table. If the base earnings in 1970 were reweighed by the composition of the faculty in 1975, four per cent of the wage increases would disappear, and the lag in wages behind non-agricultural employees would widen from 2 to 6 per cent. Also, the median member of the faculty, who was 36 years old in 1970, is probably closer to 40 years of age in 1975. During these most productive years of one's life, one would have expected real wages to increase some 10 per cent. These gains have not been realized.

Possible impact on finances of institutions.

Many administrators do not know how long they will be able to keep wages and compensation of faculty in check. If they took a look at the past, their optimism about keeping the lid on faculty compensation would increase. During periods of slow growth of enrollment, such as World War II, faculty salaries lagged other wages despite the full-employment economy. They continued to lag them even in the early 1950's, before the competition for faculty became keener. There appears to be no relief in sight in the relative deterioration of instructional wages,

unless public employee unions are as successful in pressing their claims for benefits and wages as they were in New York City. But is this likely to happen in the next few years?

Further consequences of the Ph.D. glut.

The direst predictions about the Ph.D. glut have failed to materialize, as yet. In all probability the ill effects of the oversupply of Ph.D.'s have been moderated by the upgrading of the educational attainment of assistant professors. It is likely that in the not-too-distant future, a Ph.D. may also be used as requisite for appointment to some instructor positions. Once these socially acceptable jobs for persons with high educational qualifications are exhausted, the real crisis will be felt.

If recent U. S. Department of Labor projections are to be trusted, and they do appear to be on the high/optimistic side, the Ph.D. glut is likely to be felt in the next two or three years with unprecedented force.[33] The post-secondary establishment was producing more than 30 thousand doctorates every year since 1972. Even if one were to exclude degrees in education, theology and law, on the presumption that persons with degrees in these disciplines would not clog the employment pipeline in colleges and universities, a minimum of 25 thousand Ph.D.'s have been added to the academic market pool. The gross number of openings for new academic jobs is roughly 20 thousand, on the assumption that no one who has served six years as an instructor is reappointed.

The more relevant figure is the number of net new openings likely to number roughly eight thousand a year. Since a maximum of 85 per cent of Ph.D.'s can be expected to be hired to fill these openings, no more than seven thousand new Ph.D.'s can be expected to be absorbed without displacing some previous members of the academic establishment.

Between 1975 and 1985, an estimated 40 thousand Ph.D.'s will be graduated every year according to NCES projections. In toto, between 500 to 600 doctorate holders will be seeking jobs. Openings suitable for doctorates for the total 1972 to 1985 period are estimated at 13 thousand a year by the U. S. Department of Labor. The number of doctorates awarded would have to decline to about half the current level, or one-third the projected level to equilibrate demand and supply. In hardly any discipline is the projected supply less than twice the demand, and, in some disciplines, such as education and life sciences, supply exceeds demand by a factor of four or more.

While projections based on past trends must all be taken with a grain of salt, the figures published by the U. S. Department of Labor highlight the problems which will be faced by persons with Ph.D.'s. The exact number of persons who will be forced to take jobs where their training will not be fully utilized is moot. That their numbers will be legion is certain.

Some implications for policy.

The easy supply of faculty will undoubtedly keep the relative

prices of teachers down. This will benefit the economy moves of institutions. In all probability, the lower earnings of Ph.D.'s will discourage some persons from pursuing this degree. Whether the depressed wages and unfavorable employment opportunities will discourage graduate students from completing doctorates in sufficient numbers to re-establish some equilibrium between educational requirements for jobs and persons with advanced degrees is a moot point. While, in the long run, this balance may be restored, in the relative short run of, say, the next ten years, the magnitude of the necessary adjustments are mind-boggling.

The decline in the number of persons studying for the Ph.D., if it does occur, will affect unfavorably the demand for college faculty. If one assumes that an average Ph.D. program consists of three years of full-time study, perhaps as much as 1.0 to 1.5 faculty man/years are spent on the instruction and counselling of the candidates. A decline of Ph.D. production by even one-half of the projected surplus of 396 thousand will reduce faculty demand by 200 to 300 thousand man/years, an average of 20 to 30 thousand a year, and result in no hires for the sector as a whole, as well as probable surpluses of some 10 to 20 thousand faculty members a year.

A policy analyst may well be excused if he has difficulty visualizing viable programs to deal with this problem. For instance, the projected Ph.D. surplus is sufficient to replace all Ph.D.'s employed in 1974. Thus, modest plans to retire faculty at age 55 appear to be

ineffective palliatives. With disequilibria of such magnitude, persons with realistic evaluations of the possible role of the federal government must set themselves modest goals.

Three such possible goals worth evaluating are measures (1) to identify and preserve scientific and humanistic talent through provision of post-doctoral fellowships to nurture promising researchers, and (2) to establish mid-career retraining grants for alternative employment to take care of innocent discards of the teaching system, (3) to find opportunities for doctoral recipients outside of the academic sector to complete promising projects started on a part-time basis, which need the succor of an academic environment to ensure their completion.

In a broader context, the reduced mobility of an older faculty "locked into" their institutions should stimulate the discussion about the possibility of (1) subsidizing exchange of senior faculty among first-rate institutions, and (2) establishing an institutional framework for brilliant researchers in industry to spend a year or two teaching in good institutions. The high level scholarship in American institutions during the rapid period of growth should be prevented from deteriorating, because of parochialism, during the next decade of stability.

FOOTNOTES

[1] See Table 1.

[2] See Table 2.

[3] See Table 3.

[4] See Table 4.

[5] See Table 5.

[6] See Table 6.

[7] See Table 7.

[8] Cf. data reported in Table 4.

[9] U. S. Bureau of the Census, Current Population Reports, Series P-20, No. 241, "Social and Economic Characteristics of Students: October, 1971," and No. 278, "School Enrollment--Social and Economic Characteristics of Students: October, 1974" (Washington, D.C.: U.S. Government Printing Office, 1972 and 1975).

[10] See Table 8.

[11] See Table 9.

[12] See Table 10.

[13] See Table 11.

[14] See Table 10.

[15] Joseph Froomkin, Changing Credential Objectives of Students in the Post-Secondary Sector, December, 1974.

[16] Anne M. Young, "Labor Market Experience of College Graduates," Monthly Labor Review, V. 97, No. 10 (1974), pp. 33-40.

[17] See Table 8.

[18] See Table 12.

[19] June A. O'Neill, Sources of Funds to Colleges and Universities (Berkeley: Carnegie Commission on Higher Education, 1973).

[20] See Table 13.

[21] "How Education is Faring in 50 States," Chronicle of Higher Education, Vol. 11, No. 9 (November 10, 1975).

[22] Log (Appropriations by States in millions of dollars) = -1.61589
.6423 (log 10 billions of disposable income) +
.9491 (log thousands students enrolled in public sector)
See Joseph Froomkin, et al., The Financial Prospects of the Post-Secondary Sector, 1975 to 1990 (processed), 1972.

[23] Gift and Endowment Income = .00158 (GNP in billions) -153.8728
Student Aid Endowment = .00025 (GNP) -43.21649

[24] In the period 1950-1970, private institutions' share was 85 to 87 per cent of gift and endowment income. See Joseph Froomkin, et al., op. cit.

[25] See Table 14.

[26] See Tables 15 and 16.

[27] Based on analysis of HEGIS tapes.

[28] Lyle H. Lanier and Charles J. Andersen, A Study of the Financial Condition of Colleges and Universities 1972-1975, ACE Special Report (Washington, D. C.: American Council on Education, 1975).

[29] Howard R. Bowen and W. John Minter, Private Higher Education (Washington, D. C.: Association of American Colleges, 1975).

[30] A.A.U.P. Bulletin, Summer, 1975.

[31] See Table 17.

[32] See Table 18.

[33] U. S. Department of Labor, Bureau of Labor Statistics, Ph.D. Manpower: Employment Demand and Supply 1972-85, Bulletin 1860, U. S. Government Printing Office, Washington, D. C., 1975.

TABLE 1

TOTAL DEGREE AND NON-DEGREE CREDIT ENROLLMENT,
1964/65 AND 1969/70 - 1975/76

(thousands)

1964/65	5,280
1969/70	8,005
1970/71	8,581
1971/72	8,949
1972/73	9,215
1973/74	9,602
1974/75	10,223
1975/76	11,240

Source: U. S. Department of Health, Education and Welfare, Education Division, National Center for Educational Statistics, Projections of Educational Statistics to 1983-84, 1974 Edition, U. S. Government Printing Office, Washington, D. C., 1975.

Unpublished NCES enrollment figures, 1974/75.

"Opening Fall Enrollments in 1973, 1974, and 1975," The Chronicle of Higher Education, December 15, 1975.

TABLE 2

DISTRIBUTION OF FRESHMEN AND SENIOR ENROLLEES
BY MAJOR FIELD OF STUDY FOR 1974

(per cent)

	Freshmen	Seniors
Education	15.0	23.2
Social Sciences	6.3	10.9
Business Management	26.9	18.8
Letters	2.2	3.0
Biology	3.2	3.7
Health	9.8	6.1
Engineering	5.1	5.2
Interdisciplinary	2.3	0.4
Mathematics/Physics	0.8	2.1
Physical Sciences	2.3	1.7
Other	26.1	24.9
Total	100.0	100.0

Source: Unpublished Census tabulations, Current Population Reports, 1974.

TABLE 3

TOTAL NUMBER AND PER CENT CHANGE IN STUDENTS
ENROLLED IN POST-SECONDARY INSTITUTIONS
BY LEVEL, 1970/71, 1974/75

1970-1971	Degree-Credit Undergraduates (thousands)	First Professionals (thousands)	Graduates (thousands)	Unclassified (thousands)	Non-Degree (thousands)	Total (thousands)
All Institutions	6,320	175	1,042	449	664	8,650
Four-Year	4,818	175	1,042	317	71	6,423
Two-Year	1,502	-	-	132	593	2,227
Public	4,730	77	735	304	631	6,477
Four-Year	3,338	77	735	176	49	4,375
Two-Year	1,392	-	-	128	582	2,102
Private	1,590	98	307	145	33	2,173
Four-Year	1,480	98	307	141	22	2,048
Two-Year	110	-	-	4	11	125
1974-1975						
All Institutions	6,895	238	1,194	783	1,212	10,322
Four-Year	5,046	238	1,194	428	97	7,003
Two-Year	1,849	-	-	355	1,115	3,319
Public	5,326	106	856	604	1,158	8,050
Four-Year	3,568	106	856	258	66	4,854
Two-Year	1,758	-	-	346	1,092	3,196
Private	1,569	132	338	179	54	2,272
Four-Year	1,478	132	338	170	31	2,149
Two-Year	91	-	-	9	23	123

TABLE 3 (Cont'd)

TOTAL NUMBER AND PER CENT CHANGE IN STUDENTS
ENROLLED IN POST-SECONDARY INSTITUTIONS
BY LEVEL, 1970/71, 1974/75

	Degree-Credit Undergraduates	First Professionals	Graduates	Unclassified	Non-Degree	Total
	Per Cent Change 1970/71 to 1974/75					
All Institutions	+9.0	+36.0	+14.6	+74.4	+82.5	+19.3
Four-Year	+4.7	+36.0	+14.6	+35.0	+36.6	+9.0
Two-Year	+23.1	-	-	+168.9	+88.0	+49.0
Public	+12.6	+37.7	+16.5	+98.7	+83.5	+24.3
Four-Year	+6.9	+37.7	+16.5	+46.6	+34.7	+10.9
Two-Year	+26.3	-	-	+170.3	+87.6	+52.0
Private	-1.3	+34.7	+10.1	+23.4	+63.6	+4.6
Four-Year	-0.1	+34.7	+10.1	+20.6	+40.9	+4.9
Two-Year	-17.3	-	-	+125.0	+109.1	-1.6

Source: George H. Wade, Fall Enrollment in Higher Education 1970, D.H.E.W., N.C.E.S., U. S. Government Printing Office, Washington, D. C., 1971.

Unpublished N.C.E.S. enrollment figures, 1974-75.

TABLE 4

COMPARISON OF POST-SECONDARY DEGREE-CREDIT ENROLLMENTS, BY AGE AND SOURCE
(thousands of students)

	1974	1973	1972	1971	1970	Total	Graduate	Undergraduate
	Current Population Reports					1970 Census		
All Ages	8,821	8,173	8,313	8,087	7,413	7,325	1,071	6,254
16 - 21	4,067	4,092	5,092	5,006	4,710	4,256	19	4,237
22 - 24	1,527	1,465	1,461	1,487	1,354	1,322	366	956
25 - 29	1,482	1,278	1,229	1,067	939	935	539	396
30 - 34	720	551	531	527	410	350	171	179
35+	1,025	787	n.a.	n.a.	n.a.	362	147	215
NCES	9,110	8,601	8,342	8,188	7,986	7,986	1,666	6,320

Source: U. S. Bureau of the Census, Census of Population: 1970, Subject Reports, Final Report PC(2)-5A, School Enrollment, U. S. Government Printing Office, Washington, D. C., 1973.

U. S. Bureau of the Census, Current Population Reports, Series P-20, No. 241, "Social and Economic Characteristics of Students: October 1971," U.S. Government Printing Office, Washington, D.C., 1972.

U. S. Bureau of the Census, Current Population Reports, Series P-20, No. 260, "Social and Economic Characteristics of Students: October 1972," U. S. Government Printing Office, Washington, D. C., 1974.

U. S. Bureau of the Census, Current Population Reports, Series P-20, No. 278, "School Enrollment--Social and Economic Characteristics of Students: October 1974," U. S. Government Printing Office, Washington, D. C., 1975.

See Table 2.

TABLE 5

TOTAL NUMBER OF HIGH SCHOOL GRADUATES, 1970-1974
(thousands)

	Projected	Actual
1969 - 1970	2,969	2,896
1970 - 1971	3,094	2,943
1971 - 1972	3,205	3,006
1972 - 1973	3,305	3,037
1973 - 1974	3,408	3,069
1974 - 1975	3,504	3,139

Source: Projections of Educational Statistics to 1978-79, HEW, USOE, NCES, U. S. Government Printing Office, Washington, D. C., 1970.

Projections of Educational Statistics to 1984/85, in press.

TABLE 6

PROPORTION OF HIGH SCHOOL GRADUATES WHO ENROLLED IN POST-SECONDARY INSTITUTIONS, BY SEX, 1962-1974
(per cent)

	Total	Men	Women
1962	49	55	43
1963	45	52	39
1964	48	57	41
1965	51	57	45
1966	50	59	43
1967	52	58	47
1968	55	63	49
1969	54	60	47
1970	52	55	49
1971	53	58	50
1972	49	53	46
1973	47	50	43
1974	48	49	46

Source: Kopp Michelotti, "Employment of High School Graduates and Dropouts, 1973," Monthly Labor Review, V. 97, No. 9, September, 1974.

Anne M. Young, "Students, Graduates, and Dropouts, October, 1974," Monthly Labor Review, V. 98, No. 8, August, 1975.

TABLE 7

PLANS TO ATTEND COLLEGE FOR HIGH SCHOOL SENIORS BY SEX, 1966, 1974

(per cent)

	Plan To Attend College	May Attend College	Total Who Are Considering College	Do Not Plan To Attend College	Total
1974					
Total	42	26	68	32	100
Male	40	28	68	32	100
Female	45	25	69	31	100
1966					
Total	36	24	60	40	100
Male	40	28	68	32	100
Female	31	22	53	47	100

Source: U. S. Bureau of the Census, Current Population Reports, Series P-20, No. 284, "College Plans of High School Seniors: October 1974," U. S. Government Printing Office, Washington, D. C., Table 1, p. 9.

Joseph Froomkin, Aspirations, Enrollments, and Resources, D.H.E.W., U.S.O.E., U. S. Government Printing Office, Washington, D. C., Table 2.5, p. 19.

TABLE 8

DISTRIBUTION OF STUDENTS BY INCOME, DEPENDENCY STATUS, AND ATTENDANCE STATUS, 1974
(per cent)

	DEPENDENT					
	Undergraduate		Graduate		Vocational	
	Total	Full Time	Total	Full Time	Total	Full Time
Under $4,000	3.0	3.1	1.7	1.1	5.8	16.7
$4,000-$5,999	4.9	4.8	2.0	1.6	8.3	16.7
$6,000-$7,499	4.2	4.0	2.8	2.6	9.6	-
$7,500-$9,999	7.5	7.3	7.6	9.5	10.5	16.7
$10,000-$11,999	6.7	6.5	7.2	5.3	8.8	-
$12,000-$14,999	14.9	15.0	11.7	12.7	16.6	33.3
$15,000-$19,999	16.6	16.6	16.4	14.3	13.5	16.7
$20,000+	32.8	33.2	40.3	41.8	21.5	-
N.A.	9.4	9.5	10.3	11.1	5.4	-
Total	100.0	100.0	100.0	100.0	100.0	100.1
Number of Students (thousands)	4,834	4,336	293	189	554	12

TABLE 8 (Cont'd)

DISTRIBUTION OF STUDENTS BY INCOME, DEPENDENCY STATUS, AND ATTENDANCE STATUS, 1974
(per cent)

	INDEPENDENT					
	Undergraduate		Graduate		Vocational	
	Total	Full Time	Total	Full Time	Total	Full Time
Under $4,000	44.2	51.8	31.3	45.8	32.0	-
$4,000-$5,999	15.7	17.2	14.6	19.5	16.8	-
$6,000-$7,499	7.4	5.2	4.6	4.2	10.2	-
$7,500-$9,999	8.8	5.0	11.2	5.4	11.9	-
$10,000-$11,999	4.7	2.7	12.7	8.9	7.4	-
$12,000-$14,999	4.8	3.8	12.4	6.8	9.4	-
$15,000-$19,999	2.5	2.2	5.1	2.6	4.5	-
$20,000+	2.2	1.5	3.0	2.6	4.9	-
N.A.	9.7	10.6	5.1	4.2	2.9	-
Total	100.0	100.0	100.0	100.0	100.0	-
Number of Students (thousands)	952	660	371	190	244	0

TABLE 8 (Cont'd)

DISTRIBUTION OF STUDENTS BY INCOME, DEPENDENCY STATUS, AND ATTENDANCE STATUS, 1974
(per cent)

	MARRIED, SPOUSE PRESENT					
	Undergraduate		Graduate		Vocational	
	Total	Full Time	Total	Full Time	Total	Full Time
Under $4,000	10.2	17.2	4.0	9.2	3.8	-
$4,000-$5,999	10.9	14.6	9.6	23.0	8.7	27.3
$6,000-$7,499	8.5	12.3	6.9	13.8	7.4	18.2
$7,500-$9,999	15.0	15.5	10.8	8.1	13.1	27.3
$10,000-$11,999	16.5	15.0	11.5	14.8	19.2	-
$12,000-$14,999	16.9	11.5	17.3	10.6	19.4	-
$15,000-$19,999	12.3	7.4	20.7	9.9	15.2	27.3
$20,000+	6.1	2.7	16.5	6.7	8.4	-
N.A.	3.6	3.8	2.7	3.9	4.4	-
Total	100.0	100.0	100.0	100.0	100.0	100.1
Number of Students (thousands)	1,550	693	826	282	1,104	11

TABLE 8 (Cont'd)

DISTRIBUTION OF STUDENTS BY INCOME, DEPENDENCY STATUS, AND ATTENDANCE STATUS, 1974
(per cent)

	ALL STUDENTS					
	Undergraduate		Graduate		Vocational	
	Total	Full Time	Total	Full Time	Total	Full Time
Under $4,000	9.9	10.3	10.3	17.2	8.0	8.7
$4,000-$5,999	7.6	7.4	9.3	15.9	9.7	21.7
$6,000-$7,499	5.5	5.1	5.5	7.7	8.5	8.7
$7,500-$9,999	9.3	7.9	10.3	7.7	12.2	21.7
$10,000-$11,999	8.5	7.0	10.9	10.4	14.6	-
$12,000-$14,999	14.0	13.0	15.0	10.2	17.3	17.4
$15,000-$19,999	13.8	13.6	16.0	9.1	13.4	21.7
$20,000+	23.2	25.4	17.9	15.6	11.8	-
N.A.	8.2	10.3	4.8	6.2	4.5	-
Total	100.0	100.0	100.0	100.0	100.0	99.9
Number of Students (thousands)	7,336	5,689	1,490	661	1,902	23

Source: Current Population Survey, 1974, unpublished tabulations.

TABLE 9

RATIO OF MEAN INCOME OF MALE COLLEGE GRADUATES TO HIGH SCHOOL GRADUATES, BY AGE, 1967-1973

	1967	1968	1969	1970	1971	1972	1973
All Workers 25+ Years	1.47	1.52	1.50	1.46	1.48	1.46	1.41
Year Round Full Time (Total)	1.44	1.53	1.53	1.46	1.46	1.47	1.40
25-34 Years	1.32	1.38	1.39	1.33	1.29	1.28	1.23
35-44 Years	1.50	1.48	1.54	1.49	1.50	1.51	1.48
45-54 Years	1.50	1.59	1.65	1.56	1.64	1.61	1.50
55-64 Years	1.49	1.99	1.66	1.52	1.48	1.58	1.61

Source: U. S. Bureau of the Census, Current Population Reports, Series P-60, "Money Income of Families and Persons in the United States," U. S. Government Printing Office, Washington, D. C., No. 97, Table 58, pp. 122-129; No. 90, Table 51, pp. 121-128; No. 85, Table 49, pp. 112-119.

U. S. Bureau of the Census, Current Population Reports, Series P-60, "Income of Families and Persons in the United States," U. S. Government Printing Office, Washington, D. C., No. 80, Table 49, pp. 102-109; No. 75, Table 47, pp. 101-108; No. 66, Table 41, pp. 94-101.

TABLE 10

TYPE OF JOBS FILLED BY COLLEGE GRADUATES
SOON AFTER GRADUATION
(per cent)

	1958 Graduates in 1960			1971 Graduates in 1971			1972 Graduates in 1972		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Professional and Technical (Excluding Teachers)	40.6	22.0	29.5	45.5	24.2	36.2	38.0	25.9	33.3
Teachers	24.6	64.0	39.2	20.7	49.9	33.5	19.3	45.6	29.8
Managers	21.1	3.5	18.8	3.2	1.7	2.5	13.8	5.7	10.5
White Collar	10.3	9.8	10.1	18.4	19.8	19.0	12.8	17.5	14.6
Other	3.4	.7	2.4	12.2	4.4	8.8	16.4	5.3	11.8
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Bureau of Social Science Research, Two Years After The College Degree, N.S.F., U. S. Government Printing Office, Washington, D.C., 1973, Table A-24, pp. 190-198.

Vera C. Perrella, "Employment of Recent College Graduates," Monthly Labor Review, Vol. 96, No. 2 (1973), Table 2, p. 43.

Anne M. Young, "Labor Market Experience of College Graduates," Monthly Labor Review, Vol. 97, No. 10 (1974), Table 2, p. 35.

TABLE 11

PER CENT INCREASE IN EMPLOYMENT OF PROFESSIONALS, ETC., AND MANAGERS AND ADDITIONAL NUMBERS OF PROFESSIONALS AND MANAGERS 1950 TO 1960, 1960 TO 1970, 1950 TO 1970

A. TOTAL

	1950 to 1960				1960 to 1970				1950 to 1970			
	Professionals		Managers		Professionals		Managers		Professionals		Managers	
	(per cent of increment)	(thousands)	(thousands)	(per cent of increment)	(per cent of increment)	(thousands)	(thousands)	(per cent of increment)	(per cent of increment)	(thousands)	(thousands)	(per cent of increment)
Agriculture, Construction & Mining	3.3	+85.9	+114.2	10.1	1.8	+60.7	+33.2	3.7	2.5	+146.6	+147.4	7.3
Manufacturing	24.3	+644.4	+204.6	18.2	12.4	+417.4	+76.7	8.6	17.6	+1,061.8	+281.3	13.9
Services	33.6	+891.6	+620.1	55.0	40.8	+1,375.9	+503.4	56.2	37.6	+2,267.5	+1,123.5	55.6
Market	16.4	+435.1	+538.5	47.8	24.0	+810.1	+412.3	46.0	20.7	+1,245.2	+950.8	47.0
Non-Market	17.2	+456.5	+81.6	7.2	16.8	+565.8	+91.1	10.2	16.9	+1,022.3	+172.7	8.6
Education & Public Administration	38.8	+1,029.5	+187.7	16.7	45.0	+1,519.7	+282.5	31.5	42.3	+2,549.2	+470.2	23.2
Education	32.9	+873.0	+42.7	3.8	38.0	+1,282.5	+234.2	26.1	35.8	+2,155.5	+276.9	13.7
Public Administration	5.9	+156.5	+145.0	12.9	7.0	+237.2	+48.3	5.4	6.5	+393.7	+193.3	9.5
Total	100.0	+2,651.4	+1,126.6	100.0	100.0	+3,373.7	+895.8	100.0	100.0	+6,025.1	+2,022.4	100.0

TABLE 11 (Cont'd)

PER CENT INCREASE IN EMPLOYMENT OF PROFESSIONALS, ETC.,
AND MANAGERS AND ADDITIONAL NUMBERS OF PROFESSIONALS
AND MANAGERS 1950 TO 1960, 1960 TO 1970, 1950 TO 1970

B. NET OF ENGINEERS AND SCIENTISTS SUPPORTED BY RESEARCH AND DEVELOPMENT FUNDS

	1950 to 1960				1960 to 1970				1950 to 1970			
	Professionals		Managers		Professionals		Managers		Professionals		Managers	
	(per cent of increment)	(thousands)	(thousands)	(per cent of increment)	(per cent of increment)	(thousands)	(thousands)	(per cent of increment)	(per cent of increment)	(thousands)	(thousands)	(per cent of increment)
Agriculture, Construction & Mining	3.4	+84.5			1.8	+57.7			2.5	+142.2		
Manufacturing	20.2	+488.9			11.2	+356.9			15.1	+845.8		
Services	35.7	+864.5			40.9	+1,303.0			38.6	+2,167.5		
Market	17.0	+412.2			23.4	+743.9			20.6	+1,156.1		
Non-Market	18.7	+452.3			17.7	+559.1			18.0	+1,011.4		
Education & Public Administration	40.7	+985.0			46.1	+1,466.9			43.7	+2,451.9		
Education	35.0	+847.3			39.4	+1,255.4			37.5	+2,102.7		
Public Administration	5.7	+137.7			6.7	+211.5			6.2	+349.2		
Total	100.0	+2,427.1			100.0	+3,184.5			99.9	+5,611.6		

Source: U. S. Bureau of the Census, Census of Population: 1950, 1960, 1970, Occupation by Industry, Final Report PC(2)-7C, U. S. Government Printing Office, Washington, D. C., 1952, 1962, 1972.

TABLE 12

FULL-TIME-EQUIVALENT ENROLLMENT IN POST-SECONDARY INSTITUTIONS, BY CONTROL AND DEGREE CREDIT STATUS, 1970, 1971, 1972, 1973, 1974

	PRIVATE					
	Degree Credit		Non-Degree Credit		Total	
	Number (thousands)	Index (1970 = 100)	Number (thousands)	Index (1970 = 100)	Number (thousands)	Index (1970 = 100)
1970/71	1,779	100.0	23	100.0	1,802	100.0
1971/72	1,778	99.9	31	134.8	1,809	100.4
1972/73	1,778	99.9	32	139.1	1,810	100.4
1973/74	1,782	100.2	45	195.7	1,827	101.4
1974/75	1,820	102.3	44	191.3	1,864	103.4
	PUBLIC					
1970/71	4,574	100.0	417	100.0	4,991	100.0
1971/72	4,771	104.3	517	124.0	5,288	106.0
1972/73	4,804	105.0	573	137.4	5,377	107.7
1973/74	4,914	107.4	661	158.5	5,575	111.7
1974/75	5,136	112.3	734	176.0	5,870	117.6

TABLE 12 (Cont'd)

FULL-TIME-EQUIVALENT ENROLLMENT IN POST-SECONDARY INSTITUTIONS, BY CONTROL AND DEGREE CREDIT STATUS, 1970, 1971, 1972, 1973, 1974

TOTAL

	Degree Credit		Non-Degree Credit		Total	
	Number (thousands)	Index (1970 = 100)	Number (thousands)	Index (1970 = 100)	Number (thousands)	Index (1970 = 100)
1970/71	6,353	100.0	440	100.0	6,793	100.0
1971/72	6,549	103.1	548	124.6	7,097	104.5
1972/73	6,692	105.3	605	137.5	7,187	105.8
1973/74	6,696	105.4	706	160.5	7,402	109.0
1974/75	6,956	109.5	778	176.8	7,734	113.9

Source: George H. Wade, Fall Enrollment in Higher Education, 1971, D.H.E.W., N.C.E.S., U. S. Government Printing Office, Washington, D. C., 1972.

_____, Fall Enrollment in Higher Education, 1972, D.H.E.W., N.C.E.S., U. S. Government Printing Office, Washington, D. C., 1973.

Unpublished N.C.E.S. enrollment figures, 1973-74.

See Table 1.

TABLE 13

COSTS PER STANDARD UNDERGRADUATE STUDENT IN SELECTED YEARS

	1966/67	1970/71	1973/74
		(Current Dollars)	
Public	1,142	1,639	2,021
Private	1,255	1,812	2,216
Total	1,177	1,689	2,068
	(1967/68 Dollars - Institutional Cost Index)		
Public	1,199	1,469	1,429
Private	1,317	1,625	1,567
Total	1,235	1,514	1,462
	(1967/68 Dollars - CPI Deflator)		
Public	1,175	1,409	1,431
Private	1,291	1,557	1,569
Total	1,210	1,452	1,464

Source: HEGIS

TABLE 14

COST PER STANDARD UNDERGRADUATE STUDENT, 1970/71 AND 1973/74, AND INCREASE IN TOTAL BUDGET FROM 1970/71 TO 1973/74, BY CONTROL AND PER CENT DECREASE IN TOTAL FTE ENROLLMENT

	No Enrollment Decrease			0 - 10 Per Cent Enrollment Decrease			Greater Than 10 Per Cent Enrollment Decrease		
	Cost Per Standard Undergraduate Student (current dollars)		Increase in Budget (per cent)	Cost Per Standard Undergraduate Student (current dollars)		Increase in Budget (per cent)	Cost Per Standard Undergraduate Student (current dollars)		Increase in Budget (per cent)
	1970/71	1973/74		1970/71	1973/74		1970/71	1973/74	
Public	1,713	2,029	36.6	1,503	1,948	25.3	1,446	2,001	16.1
Private	1,910	2,231	34.8	1,728	2,121	18.2	1,721	2,347	8.8
Total	1,757	2,073	36.2	1,591	2,016	22.3	1,560	2,140	12.8

Source: Special tabulations, HEGIS Surveys, 1971, 1974.

TABLE 15

COMPARISON OF COSTS PER STANDARD UNDERGRADUATE STUDENT IN INSTITUTIONS BY LEVEL OF SELECTIVITY, CONTROL, AND CHANGES IN ENROLLMENT, 1970/71 AND 1973/74
(current dollars)

Selectivity*	No Enrollment Decrease				0 - 10 Per Cent Enrollment Decrease			
	Public		Private		Public		Private	
	1970/71	1973/74	1970/71	1973/74	1970/71	1973/74	1970/71	1973/74
High	-	-	2,717	3,062	-	-	2,368	2,692
Medium	2,062	2,292	1,869	2,188	1,929	2,686	1,799	2,357
Average	1,679	2,023	1,619	2,055	1,461	1,745	1,512	1,859
Below Average	1,414	1,692	1,627	1,826	1,290	1,678	1,460	1,862
Non-Selective	1,701	2,062	1,519	1,881	1,462	1,949	1,707	2,180
	Greater Than 10 Per Cent Enrollment Decrease							
High	n.a.	n.a.	2,187	3,287				
Medium	2,178	2,866	2,005	2,589				
Average	1,609	2,124	1,711	2,245				
Below Average	1,211	1,707	1,658	2,200				
Non-Selective	1,432	2,092	1,614	2,451				

*High Selectivity - Combined SAT Equivalent Score ..... 1200+
Medium Selectivity - Combined SAT Equivalent Score 1100-1199
Average Selectivity - Combined SAT Equivalent Score 1000-1099
Below Average Selectivity - Combined SAT Equivalent Score ... 900- 999
Non-Selective - Combined SAT Equivalent Score ..... less than 900

Source: See Table 16.

TABLE 16

INDEX OF EXPENDITURES PER STANDARD UNDERGRADUATE STUDENT BY SELECTIVITY OF INSTITUTION AND CONTROL, 1970/71 AND 1973/74

(Average = 100)

Selectivity	Public		Private	
	1970/71	1973/74	1970/71	1973/74
High	181	166	161	147
Medium	124	120	118	115
Average	100	100	100	100
Below Average	82	85	100	97
Non-Selective	100	103	100	100

Source: See Table 15.

TABLE 17

DISTRIBUTION OF FACULTY BY RANK,
1970/1971 AND 1974/1975
(per cent)

	1970/1971	1974/1975
Professor	24.5	27.8
Associate	23.7	27.2
Assistant	34.9	33.1
Instructor	15.3	10.5
Lecturer	1.6	1.4
Total	100.0	100.0

Source: AAUP, Economic Status of the Profession, AAUP Bulletin, Summer Issues, 1971, 1975.

TABLE 18

AVERAGE SALARY AND INDEXES SHOWING TRENDS IN AVERAGE SALARY FOR FACULTY MEMBERS (ALL RANKS COMBINED) AND IN COMPENSATION FOR WAGE AND SALARY WORKERS SINCE 1970

(1970 = 100)

Year	Average Salary	Index of Average Salary	Index of Wage and Salary Workers	CPI
1970	$13,187	100.0	100.0	100.0
1971	13,662	103.6	106.1	104.2
1972	14,222	107.8	112.7	107.7
1973	14,948	113.4	119.7	114.4
1974	15,814	119.9	130.1	126.9

Source: AAUP, Economic Status of the Profession, AAUP Bulletin, Summer Issues, 1974, 1975.

Unpublished earnings tabulations, Bureau of Labor Statistics, 1974.